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[0082] It may also be noted that center beam 36 has deep section as compared to center beam cars of which the inventor is aware. That is, the depth of the center beam, taken at mid-span between the trucks, corresponds to the depth of a loaded bundle of lumber, that depth being over 30 inches, namely $33 - 5/8$ inches (+/-) measured from lower flange 106 to upper flange 102, such that the deck sheets of medial portion 29 extends laterally outward from lower flange 106, and the deck sheets of end portion 27 and 28 extend laterally outboard away from upper flange 102. At mid-span center sill 36 has an aspect ratio of height (measured over upper and lower flanges, 102 and 106) to width (measured between the outside faces of webs 103 and 104) that is more than 2.4 : 1, lying in the range of 3.0 : 1 to 5.0 : 1. In the preferred embodiment the aspect ratio about 3.4 : 1. A high aspect ratio beam, as shown, tends to permit the deck sections to be mounted at heights corresponding to the center sill flanges, without tending to require relatively more complicated intermediate deck staging above the upper flange of the center sill, or other complications.

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[0089] The last bays of the central web structure are shear bays. That is, solid panels 61, 62 (Figure 2a) are shear panels, or webs, welded along the longitudinal centerline of car 20 (or 70) between the web of the nearest post 219 to end bulkhead 50 (or 52) and the inner flange of beam 252, namely end sheet 268, and also between the shear plate of end decking portions 27 (or 28) and top chord 32. When car 20 (or 70) is subject to an end load, such as an end impact when carrying a load of bundles of lumber, the nearest post 219 and box beam 252 act as the flanges of a deep beam whose web is the shear panel provided by solid panel 61 or 62.

[0090] The juncture of the web, namely panel 61 (or 62) is not aligned (i.e., is not co-planar with) with either leg 271 or leg 272 of box beam 252, but rather is welded amidst sheet 268 between them. This alone may not necessarily provide a fully satisfactory joint. Gusset plates 280, 281, 282 and 283 are welded in the same plane as panel 61 (or 62) to the back side, namely the longitudinally outboard face, of sheet 268 interstitially between the longitudinally inwardly extending horizontally planar legs of transverse beam members 261, 262 and 263, the end deck top flange 102, and the lower leg of C-channel stub portion 278. Gusset plates 280 to 283 act as web extensions of panel 61 (or 62). Conceptually, the central portions of transverse beams 261 to 265, welded with toes against sheet 268 form hollow section structural members of low aspect ratio (that is, their length between the legs of box beam 252 is short relative to their depth of section in the vertical direction). The vertical shear load imposed in gusset plates 280 to 283 (and in panel 60 or 61) is reacted at either end of the transversely extending hollow sections. Thus the shear transfer may tend to occur over a distance corresponding to the overlap, and the tendency to out-of-plane deflection may tend to be